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Georgia Southern Examines Respiratory Depositions of Endotoxins in Homes Burning Biomass Fuels

April 25, 2016



Recent studies have highlighted the presence of endotoxin in indoor air and its role in respiratory morbidities. Burning of household fuels including unprocessed wood could be a major source of endotoxin in homes.

Dr. Adhikari and colleagues measured endotoxin levels in different size fractions of airborne particles (PM10, PM2.5, and PM1), and estimated the deposition of particle-bound endotoxin in the respiratory tract. The study was carried out in homes burning solid biomass fuel and liquefied petroleum gas or LPG. Sample filters were analyzed for endotoxin and organic carbon content. Household characteristics including temperature, relative humidity, and carbon dioxide levels were also monitored.

Results of the study indicate that fine particles are significant contributors to the deposition of endotoxin in the alveolar region of the lung. Considering the paramount role of endotoxin exposure, and the source and timing of exposure on respiratory health, additional studies are warranted to guide evidence-based public health interventions.

[“Predictors and respiratory depositions of airborne endotoxin in homes using biomass fuels and LPG gas for cooking,”](#) was published in the Journal of Exposure Science and Environmental Epidemiology, a prestigious journal from the Nature Publishing Group.

Dr. Bijaya K. Padhi, Center for Environmental and Occupational Health, Asian Institute of Public Health, was the lead author and Dr. Atin Adhikari, Assistant Professor of Environmental Health Sciences at the Jiann-Ping Hsu College of Public Health Georgia Southern University was one of the co-authors.

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